

## Motivation is a necessary ingredient for studying Medicine

La motivación es un ingrediente necesario en el estudio de la  
carrera de Medicina

Arturo Puga García<sup>1\*</sup> <https://orcid.org/0000-0001-8843-6594>

Vicente Fárdales Macías<sup>1</sup> <https://orcid.org/0000-0001-7591-653X>

Rosa María Ramos Palmero<sup>1</sup> <https://orcid.org/0009-0006-7190-0534>

Eduardo Veloso Pérez<sup>1</sup> <https://orcid.org/0000-0002-3215-0754>

Mayra Madiedo Albolatrach<sup>1</sup> <https://orcid.org/0009-0005-6108-9517>

Gloría María Puga Madiedo<sup>1</sup> <https://orcid.org/0000-0003-1603-1664>

<sup>1</sup> Sancti Spíritus University of Medical Sciences. Sancti Spíritus. Cuba.

\*Corresponding author. Email address: [arturo.ssp@infomed.sld.cu](mailto:arturo.ssp@infomed.sld.cu)

---

### ABSTRACT

**Background:** motivation constitutes one of the main factors in academic performance due to its influence on the teaching-learning process of students.

**Objective:** to determine the motivation that first-year students have to study Medicine.

**Methods:** a descriptive and cross-sectional research was carried out at the Sancti Spíritus University of Medical Sciences, during the 2024 academic year. The universe consisted of 288 students. A sample of 106 was selected, determined by single-stage cluster sampling, after obtaining informed consent. Theoretical methods were used: historical-logical,

analysis-synthesis and induction-deduction; empirical methods: documentary analysis of the evaluation records of the study groups, questionnaires: MEM 12 (motivation to study Medicine) and to measure academic motivation using an ordinal Likert scale from 1 to 10; mathematical-statistical methods: percentage calculation was used to quantify the main motivations of the students.

**Results:** altruistic and humanistic motivations, both internal and external, were reported by the students for studying Medicine. Academic motivation decreased during the academic year and showed an association with academic performance in the subjects of Cell, Tissues and Integumentary System (CTT), Human Ontogeny and Osteomyoarticular System (SOMA), Metabolism and Nutrition (MN), and Nervous, Endocrine and Reproductive Systems (SNER).

**Conclusions:** the motivation of first-year students to study Medicine was determined. The positive relationship between a high level of motivation and academic achievement is highlighted.

**MeSH:** education, medical, undergraduate; learning; conditioning, psychological; education, medical.

---

## RESUMEN

**Fundamento:** la motivación constituye uno de los principales factores en el rendimiento académico por su influencia en el proceso enseñanza aprendizaje de los estudiantes.

**Objetivo:** determinar la motivación que tienen los estudiantes de primer año para estudiar la carrera de Medicina.

**Métodos:** se realizó una investigación descriptiva y transversal en la Universidad de Ciencias Médicas de Sancti Spíritus, durante el curso 2024. El universo estuvo constituido por 288 estudiantes. Se seleccionó una muestra de 106, determinada por conglomerados en una sola etapa, previo consentimiento informado. Se utilizaron métodos teóricos: histórico-lógico, análisis-síntesis e inducción-deducción; empíricos: análisis documental de los registros de evaluación de los grupos de estudio, cuestionarios: MEM 12 (motivación para estudiar Medicina) y para medir la motivación académica mediante una escala ordinal de Likert del 1 al 10; matemático-estadísticos: se utilizó el cálculo porcentual para cuantificar las principales motivaciones de los estudiantes.

**Resultados:** las motivaciones de tipo altruista y humanista, internas y externas fueron referidas por los estudiantes para estudiar la carrera de Medicina. La motivación académica fue disminuyendo durante el curso y mostró asociación con el rendimiento académico, en las asignaturas de Célula, Tejidos y Sistema Tegumentario (CTT), Ontogenia Humana y Sistema Osteomioarticular (SOMA), Metabolismo y Nutrición (MN) y Sistemas Nervioso, Endocrino y Reproductor (SNER).

**Conclusiones:** se determinó la motivación de los estudiantes de primer año para estudiar la carrera de Medicina. Se destaca la relación positiva entre el alto nivel de motivación y los logros académicos.

**DeSC:** educación de pregrado en Medicina; aprendizaje; condicionamiento psicológico; educación médica.

---

Submitted: 01/09/2026

Accepted: 02/18/2026

## INTRODUCTION

The demand for admission to medical school worldwide has been increasing compared to other university degree programs. In Cuba, although enrollment numbers remain high, the planned slots are not being filled. Demotivation, dropouts in the early years, and the lowering of standards established in previous decades influence academic results, making motivation to study medicine a concern within the university context of medical schools.

Some students who enroll face difficult situations to overcome during their studies and fail to build a successful academic trajectory. In this regard, course failure, frustration, and school dropout often occur, perhaps due to a lack of vocation for service and choosing this career because of a "social trend"; that is, because the majority of society thinks that being a

doctor means having prestige, guaranteed economic income, and social status, among other things.<sup>(1)</sup>

In this context, studies by Céspedes *et al.*<sup>(2)</sup> recognize the importance of students' prior education and their academic performance in higher education. The training of a comprehensive and competent professional demands selectivity for access to university studies. To this end, entrance examinations are held; however, deficiencies in prior education can lead to low motivation, and consequently, the abandonment of university studies.

Altruistic, internal, and external motivations are present when choosing a university degree, and some may prevail over others. These determine a motivational behavior that manages to influence the performance, adaptation, and continuity of the university studies undertaken.

The choice of the medical profession constitutes a crucial moment in the lives of adolescents. It is a complex process involving personal, family, and social factors related to the acquisition of knowledge, skills, values, as well as job opportunities.<sup>(3)</sup>

Motivation is an important factor in academic success: it influences commitment, effort, and performance. Academic motivation shows the enthusiasm, interest, and disposition for study; it is the degree of a person's satisfaction with their school environment. It provokes feelings of efficacy related to educational well-being. This attitude and study habits are closely related to the academic performance of students. In the consulted literature,<sup>(4)</sup> there are studies in general education where this relationship with learning, study habits, and student dropout in high school students is analyzed.

Although reviewed articles show studies referring to factors associated with academic performance in medical students and the characteristics of admission and academic outcomes in first-year students,<sup>(5,6)</sup> in the context of medical education, it is necessary to continue researching the motivational profile of those who currently decide to enter medical university.

The objective of this research is to determine the motivation that first-year students have to study Medicine.

## METHODS

An exploratory, descriptive, and cross-sectional research study was conducted at the Sancti Spíritus University of Medical Sciences during the 2024 academic year. The universe consisted of the nine academic groups of the Medicine program (288 students), and the sample comprised 106 students, selected through single-stage cluster sampling, after obtaining informed consent.

Theoretical methods used:

- Historical-logical: This was applied with the purpose of determining the background of the subject under study and the trends it has experienced. This was based on the analysis of evidence published in peer-reviewed scientific journals. This method was also fundamental for shaping the logical foundations of the theoretical framework, approaching the behavior of the problem, and establishing its current state.
- Analysis-synthesis and induction-deduction: Used in all processes that required data collection (factual or theoretical). They also played an essential role in reconstructing its meaning through interpretation.

Empirical methods:

Documentary analysis: Attendance and evaluation records corresponding to the groups that made up the sample were reviewed.

MEM 12 Questionnaire (motivation to study Medicine). To obtain evidence on the motivation of first-year students to study medicine, the main variable of the study, it was applied at the beginning of the program. This instrument consists of 21 items, all measured on an ordinal scale with five categories: Totally disagree, Disagree, Indifferent, Agree, and Strongly agree.

To analyze the motivations using the MEM 12, the items were stratified into two groups; one with the least indicated motivations: Totally Disagree (TD), Disagree (D), and Indifferent (I); and another with the most indicated motivations: Agree (A) and Strongly Agree (SA).

The MEM 12 presents three dimensions depending on altruistic and humanistic, internal, and external motivations:

- Altruistic and humanistic motivations: Includes items 1 (I contribute to improving society), 2 (I desire to constantly progress), 8 (it will provide me with economic security), and 21 (to practice as a family doctor).
- Internal motivations: Composed of items 3 (I can work with people), 10 (I acquire a high social status), 15 (I like demanding studies), 17 (I can exercise my leadership), and 18 (it allows me to be original and creative).
- Motivations conditioned by external factors: Covers items 4 (I fulfill my dreams), 5 (I can help others), 6 (I can express values that serve as a model for people), 7 (I earn the respect of others), 9 (I acquire a high social status), 11 (it brings fame and recognition), 12 (to learn more about subjects that attract me), 13 (I would have greater chances of success), 14 (because they are the best students), 16 (it requires great intellectual capacity), 19 (it is a profession of challenges and demands), 20 (it allows me to discover and investigate things).

Student questionnaire: Aimed at measuring academic motivation (AM), determined by interest, desire, and decision to study. It was measured using a 10-category Likert scale (1 to 10) at three points during the course: at the beginning, middle, and end. To analyze the potential association with the student's academic outcome, it was stratified into three categories: low ( $\leq 4$ ), medium (5-7), high (8-10).

Data regarding the student's academic outcome were obtained from the final exam grade records for the subjects Cells and Tissues/Integumentary System (CTT), Ontogeny and Soma (SOMA), Molecular Biology (BM), Metabolism/Nutrition, and Nervous, Endocrine, and Reproductive Systems (SNER).

Mathematical-statistical methods: Allowed data processing using the professional statistical software package SPSS (version 18), facilitating a clear and accessible interpretation of the findings. Results are presented in frequency tables.

## RESULTS AND DISCUSSION

Considering the theoretical references analyzed and the results of the applied questionnaire (MEM 12), the motivations that first-year medical students have for starting this career in medical sciences were determined.

Altruistic and humanistic motivations were the most frequently indicated by students: improving society and constantly progressing were among the most cited, unlike the economic security that being a doctor could provide, an aspect that coincides with findings from a study conducted by Soto Carrasco<sup>(7)</sup> regarding the motivational factors influencing the decision to enter medical school. 52.8% did not report studying the degree to practice as a family doctor as a humanistic motivation. In this regard, it is necessary for the university to direct activities in pre-university institutes to strengthen this valuable achievement of Cuban medicine. It is important to develop vocational guidance from preceding educational levels, with the aim of contributing to the choice of studies and the reaffirmation of values such as responsibility, humanism, and love for the medical profession.

Being able to work with other people, fulfilling dreams, and being able to help others were internal motivations described by the students. This coincides with the findings expressed by Rousseau *et al.*<sup>(8)</sup> in their study in Argentina 46.2% do not consider that they should be exposed to demanding studies during the degree, and 73.6% assume that being able to exercise leadership is not a reason to study medicine, as expressed in Table 1. This, in the authors' opinion, could reflect the poor teaching performance and lack of initiative that certain groups of students display in their student activities and later as professionals.

**Table 1.** Altruistic and internal motivations in 1st year Medical students. Sancti Spiritus University of Medical Sciences. 2024 academic year

<b>Altruistic and humanistic dimension</b>	<b>TD</b> No./(%)	<b>ED</b> No./(%)	<b>I</b> No./(%)	<b>DA</b> No./(%)	<b>MA</b> No./(%)
1. I contribute to improving society	8 (7,5)	1 (0,9)	5 (4,7)	62 (58,5)	30 (28,3)
2. I desire to constantly progress	7 (6,6)	2 (1,9)	4 (3,8)	41 (38,7)	52 (49,1)
8. It will provide me with economic security	12 (11,3)	16 (15,1)	46 (43,4)	29 (27,4)	3 (2,8)
21. To practice as a family doctor	21 (19,8)	21 (19,8)	14 (13,2)	37 (34,9)	13 (12,3)
Internal dimension					
3. I can work with people	13 (12,3)	2 (1,9)	8 (7,5)	48 (45,3)	35 (33,0)
10. I would have secure employment	11 (10,4)	11 (10,4)	32 (30,2)	45 (42,5)	7 (6,6)
15. I like demanding studies	12 (11,3)	18 (17)	19 (17,9)	42 (39,6)	15 (14,2)
17. I can exercise my leadership	12 (11,3)	25 (23,6)	41 (38,7)	17 (16)	11 (10,4)
18. It allows me to be original and creative	7 (6,6)	14 (13,2)	30 (28,3)	45 (42,5)	10 (9,4)

Source: MEM 12 questionnaire

Among the external motivations, as shown in Table 2, discovering and investigating events, considering it a profession of challenges and demands, as well as expressing values that serve as a model for people, were among the most frequently indicated. Conversely, 67% did not consider acquiring a high social status as a motivation for starting medical studies. The consulted literature makes reference to these findings. (9)

**Table 2.** External motivations in 1st year Medical students. Sancti Spiritus University of Medical Sciences. 2024 academic year

<b>Dimension: External Motivations</b>	<b>TD</b> No./(%)	<b>ED</b> No./(%)	<b>I</b> No./(%)	<b>DA</b> No./(%)	<b>MA</b> No./(%)
4. I fulfill my dreams	13 (12,3)	4 (3,8)	6 (5,7)	17 (16)	66 (62,3)
5. I can help others	11 (10,4)	1 (0,9)	4 (3,8)	27 (25,5)	63 (59,4)
6. I can express values that serve as a model for people	5 (4,7)	7 (6,6)	25 (23,6)	48 (45,3)	21 (19,8)
7. I earn the respect of others	6 (5,7)	12 (11,4)	16 (15,2)	50 (47,6)	21 (20)
9. I acquire a high social status	12 (11,3)	21 (19,8)	38 (35,8)	28 (26,4)	7 (6,6)
11. It brings fame and recognition	9 (8,5)	27 (25,5)	45 (42,5)	20 (18,9)	5 (4,7)
12. To learn more about subjects that attract me	12 (11,3)	5 (4,7)	16 (15,1)	47 (44,3)	26 (24,5)
13. I would have greater chances of success	14 (13,2)	13 (12,3)	29 (27,4)	40 (37,7)	10 (9,4)
14. Because they are the best students	16 (15,1)	37 (39,4)	32 (30,2)	19 (17,9)	2 (1,9)
16. It requires great intellectual capacity	10 (9,4)	11 (10,4)	21 (19,8)	45 (42,5)	19 (17,9)
19. It is a profession of challenges and demands	13 (12,3)	2 (1,9)	7 (6,6)	38 (35,8)	46 (43,4)
20. It allows me to discover and investigate things	12 (11,3)	4 (3,8)	7 (6,6)	41 (38,7)	42 (39,6)

Source: MEM 12 questionnaire

Intrinsic motivation is characterized by the internal desire to learn and improve due to personal interest and influences the achievement of better results; it not only affects performance but also fosters greater satisfaction with the learning process. Meanwhile, extrinsic motivation, caused by external factors such as rewards or pressure to obtain good results, shows a more unstable influence on academic performance.

In the current context of medical education, it is essential to work on the motivations that students have in order to guide vocational orientation from preceding educational levels, which contributes to the training of competent professionals committed to social development. It is considered that this work is still insufficient: dropouts, demotivation for studies, academic dismissals, and non-compliance with training programs prevail; the social commitment of graduates with a high professional level is put at risk. At the beginning of the course, 106 students (91.5%) stated that they felt academically motivated: of these, 48 (46.2%) had high academic motivation. However, during the course, the number of students with low academic motivation increased, from 1 in 12 at the beginning of the course (8.5%) to approximately 1 in 5 (21.4%) at the end of the academic period, as observed in Table 3.

**Table 3.** Academic motivation of students at the beginning, middle, and end of the course. Sancti Spiritus University of Medical Sciences. 2024 academic year

Academic motivation	Moment		
	Beginning (106)	Middle(102)	End (98)
Low ( $\leq 4$ )	9 (8,5)	18 (14,9)	21 (21,4)
Medium (5-7)	48 (45,3)	35 (28,9)	41 (41,8)
High (8-10)	49 (46,2)	49 (40,5)	36 (36,7)

Source: MEM 12 questionnaire

The decrease in academic motivation during the academic year may have been influenced by insufficient development of vocational guidance programs and activities prior to university

entrance; the complexity and demands of the study programs, as well as other didactic, institutional, and sociodemographic variables that also have an impact.

In the current scientific context, student resistance to active learning practices has been explored; although these are designed to increase intrinsic motivation, some students show a certain reluctance due to the perception that active learning is more demanding. However, those who overcome this resistance tend to develop more intrinsic motivation and improve their long-term performance.<sup>(10)</sup> This aspect differs from what was found in this research during the first year.

Regardless of the subject, it was observed that students with low academic motivation were more prone to having low academic performance (grades of 2 or 3 on the final exam), as shown in Table 4.

In contrast, with the exception of SNER, where the only two students who took the final exam with high academic motivation did not achieve high academic performance, in the remaining subjects, the percentage of students with high academic performance in this category exceeded 40%, reaching 63.3% and 66.7% in Metabolism Nutrition and Molecular Biology, respectively.

**Table 4.** Academic motivation and academic performance of students on the final exam of different subjects. Sancti Spiritus University of Medical Sciences. 2024 academic year

Subjects	Academic motivation	Academic performance n (%)	
		Low	High
SOMA, n=77	Low	16 (88,9)	2 (11,1)
	Medium	26 (76,5)	8 (23,5)
	High	14 (56)	11 (44)
CTT, n=94	Low	18 (100)	0
	Medium	35 (100)	0
	High	17 (41,5)	24 (58,5)
BM, n=67	Low	15 (83,3)	3 (16,7)
	Medium	22 (78,6)	6 (21,4)
	High	7 (33,3)	14 (66,7)
SNER, n=49	Low	20 (95,2)	1 (4,8)
	Medium	20 (76,9)	6 (23,1)
	High	2 (100)	0
MN, n=71	Low	21 (100)	0
	Medium	35 (89,7)	4 (10,3)
	High	4 (36,4)	7 (63,6)

Source: Attendance and evaluation records

To reverse these results, teachers must consider motivation as an essential factor and apply strategies to foster it, increasing the use of innovative resources and encouraging students' personal expression. Creating a positive environment and the practical application of content strengthens extrinsic motivation, while debates and presentations promote the intrinsic motivation and autonomy fundamental for meaningful learning.<sup>(11)</sup> These strategies will lead to greater academic motivation and an improvement in the teaching-learning process.

Academic motivation is configured as a primary element for the student, being the process that initiates, maintains, and controls attitudes and behaviors towards academic work. Knowing its fluctuations during the academic year will allow us to understand the medical student in a dimension so far little studied, from the perspective of their own experience, which will benefit the future design of teaching strategies aimed at promoting a type of motivation that benefits academic and professional success.

Academic motivation aligns with professional satisfaction; its decrease during the initial year of the degree could be due to other determinants of well-being not measured in this study that gain importance over time, specifically in the economic, social, and labor context in which humanity interacts in the 21st century.

In the authors' opinion, systematic research to evaluate student motivation in order to improve academic performance is insufficient; however, there are results that cover other study variables: memory and the link to physical activity related to better academic performance.<sup>(12)</sup>

The authors agree with Palacios de Mosquera<sup>(13)</sup> that teachers propose tasks that respond to student demands when defining learning objectives. In this sense, academic motivation focuses on three dimensions: value, expectation, and effectiveness. All of this depends on the learning environment created in the teaching process.

Promoting lifelong learning is a key aspect of modern education. Endres *et al.*<sup>(14)</sup> highlight the importance of fostering self-directed learning strategies to maintain high levels of motivation in students. As learners develop skills to learn autonomously, their intrinsic and academic motivation increases, which guarantees lifelong learning and continuous academic success.

Currently, a new experience is being implemented at the university, the Medical School, aimed at achieving greater motivation and vocational orientation towards Medicine in

twelfth-grade students. It allows a perception of the formative role and the relationship with content related to the studies of the profession to be pursued.

A similar experience was found in the consulted literature<sup>(15)</sup> where the development of entrance courses and the perceived usefulness in Biology, and Health and Society are highlighted, but deficiency in Chemistry knowledge during the first year. The study identifies specific areas where entrance programs can be strengthened to improve academic preparation, which could result not only in facilitating the transition to university studies but also in improving student retention.

The authors consider it necessary to develop new research that addresses this relationship, contextualized to the educational system, which allows influencing the educational policies and strategies of the contemporary medical university. Motivation must be studied with a comprehensive approach, with the aim of promoting it during the different years of study. This requires a university context that supports the emotional, intellectual, and academic needs of students.

#### Scientific contribution

It constitutes a contribution to medical education in the Medicine degree, by determining the altruistic, internal, and external motivations that first-year students have. The research provides evidence of the association between academic motivation and academic performance. The results constitute references for establishing comprehensive strategies aimed at achieving graduate efficiency in their cycle as an equivalent of academic efficiency.

## CONCLUSIONS

The main motivations of students for entering the Medicine degree program were determined, with a predominance of altruism and humanism. Economic security, social status, fame and recognition, developing their leadership, and practicing as a family doctor were not among the most identified motivations. The relationship between a high level of motivation and academic achievement is highlighted.

## BIBLIOGRAPHIC REFERENCES

1. Zárate D. Estudiar Medicina: ¿Vocación o Moda? Rev Educ Cienc Salud [Internet]. 2020 [cited 03/04/2024]; 17(1):37-40. Available at: <https://recs.udec.cl/article/estudiar-medicina-vocacion-o-moda/>
2. Céspedes Miranda M, Suarez Castillo N, Carrión Pérez E, Guerrero Ramírez A, Espinosa Martínez J. Características del ingreso y resultados académicos en estudiantes de primer año de Medicina. EDUMECENTRO [Internet]. 2022 [cited 03/04/2024]; 14: 1-17. Available at: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S2077-28742022000100001&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2077-28742022000100001&lng=es)
3. Pichardo D, González A, Garriga-Alfonso N. Orientación profesional vocacional hacia la carrera de Medicina en estudiantes de preuniversitario. Rev Med Electron [Internet]. 2024 [cited 16/01/2026]; 46:e5408. Available at: <https://revmedicaelectronica.sld.cu/index.php/rme/article/view/5408>
4. Ninabanda Guanotaxi R, Cartagena Yumbillo M, Pilamunga Hinojoza CL, Estrella Aguay, GE. Análisis de la relación entre la motivación y el rendimiento académico en estudiantes de Bachillerato: una revisión sistemática. Asce Magazine [Internet]. 2025 [cited 10/09/2024]; 4(4):2265-85. Available at: <https://doi.org/10.70577/asce.v4i4.527>
5. Hernández Yépez Palmer J, Contreras Carmona Pavel J, Inga-Berrosipi Fiorella, Basurto Ayala Patricia, Valladares Garrido Mario J. Factores asociados al rendimiento académico en estudiantes de medicina. Rev Cub Med Mil [Internet]. 2022 [cited 06/02/2024]; 51(1):e1673. Available at: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S0138-65572022000100006&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0138-65572022000100006&lng=es)
6. Céspedes Miranda E, Suárez Castillo N, Carrión Pérez E, Guerrero Ramírez A, Espinosa Martínez J. Características del ingreso y resultados académicos en estudiantes de primer año de Medicina. EDUMECENTRO [Internet]. 2021 [cited 22/04/2024]; 14: [aprox. 16 p.]. Available at: <https://revedumecentro.sld.cu/index.php/edumc/article/view/1682>
7. Soto Carrasco S, Escudero C. Factores motivacionales que influyen en la decisión de ingresar a la carrera de medicina. AMC [Internet]. 2017 [cited 03/06/2024]; 21(3): 308-10. Available at: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1025-02552017000300001&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1025-02552017000300001&lng=es)

8. Rousseau Portalis M, Roldán A, Coloma Oré R, Pontiggia G, Zereaga P, Politi M. Motivaciones altruistas y satisfacción profesional en estudiantes de Medicina de la Argentina: un estudio de corte transversal. *Rev Hosp Ital B Aires* [Internet]. 2023 [cited 03/04/2024];43(4):181-90. Available at: <http://ojs.hospitalitaliano.org.ar/>
9. Flores Meléndez M, Góngora Cortés J, López Cabrera M, Eraña Rojas E. ¿Por qué convertirse en médico?: la motivación de los estudiantes para elegir medicina como carrera profesional. *Educ Med* [Internet]. 2020 [cited 10/03/2024];21(1):[aprox. 12 p.]. Available at: <https://doi.org/10.1016/j.edumed.2019.01.002>
10. Morris LS, Grehl M M, Rutter SB, Mehta M, Westwater ML. On what motivates us: A detailed review of intrinsic v. extrinsic motivation. *Psychological Medicine* [Internet]. 2022 [cited 03/12/2025];52(10):1801–16. Available at: <https://doi.org/10.1017/S0033291722001611>
11. Pasqueline E. Mendoza L. La motivación y su importancia en el aprendizaje significativo. *Rev Inve Com* [Internet]. 2025 [cited 15/01/2026];5(3):[aprox. 4 p.]. Available at: Disponible en: <https://doi.org/10.5281/zenodo.14217937>
12. Peña MB. El impacto de la motivación en el rendimiento académico. *South Florida J of Development, Miami* [Internet]. 2024 [cited 03/12/2025];5(10):1-12. Available at: [www.researchgate.net/publication/384833521](http://www.researchgate.net/publication/384833521)
13. Palacios de Mosquera A. La motivación: elemento dinamizador en la formación de profesores de educación infantil en contexto colombiano. *Rev Varela* [Internet]. 2025 [cited 10/12/2025];25(30):[aprox. 14 p.]. Available at: <https://revistavarela.uclv.edu.cu>
14. Endres T, Leber J, Böttger C, Rovers S, Renkl A. Improving Lifelong Learning by Fostering Students Learning Strategies at University. *Psychology Learning and Teaching* [Internet]. 2021 [cited 10/01/2026];20(1):144-60. Available at: <https://doi.org/10.1177/1475725720952025>
15. Tognetti C. Percepción estudiantil sobre la relevancia de contenidos del ingreso para cursar la carrera de Medicina. *EDUMECENTRO* [Internet]. 2025 [cited 20/01/2026];17:e3102. Available at: <http://scielo.sld.cu/pdf/edu/v17/2077-2874-edu-17-e3102.pdf>

#### **Conflict of interest statement**

[This journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/)

The authors declare no conflict of interest.

### **Authors' contribution**

Conceptualization: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo, Eduardo Veloso Pérez

Data curation: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero

Formal analysis: Arturo Puga García, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo, Vicente Fárdales Macías, Eduardo Veloso Pérez

Funding acquisition: Arturo Puga García, Vicente Fárdales Macías

Investigation: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo, Eduardo Veloso Pérez

Methodology: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah

Project administration: Arturo Puga García

Resources: Arturo Puga García, Mayra Madiedo Albolatrah, Eduardo Veloso Pérez

Supervision: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo

Validation: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo, Eduardo Veloso Pérez

Visualization: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo, Eduardo Veloso Pérez

Writing – original draft: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo, Eduardo Veloso Pérez

Writing – review & editing: Arturo Puga García, Vicente Fárdales Macías, Rosa María Ramos Palmero, Mayra Madiedo Albolatrah, Gloria María Puga Madiedo, Eduardo Veloso Pérez

This article is published under the [Creative Commons](https://creativecommons.org/licenses/by-nc/4.0/) license.